

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/EP 03/03934

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H02K5/04 F02B37/10 F02C6/12 F04D25/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H02K F02B F02C F04D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 253 031 A (FRISTER MANFRED) 24 February 1981 (1981-02-24)	1-7, 14, 19-21
Y	column 3, line 1 -column 4, line 31; figure 1	8, 9
A		10-13, 15-18
X	WO 02 23047 A (HONEYWELL INT INC) 21 March 2002 (2002-03-21)	1-5, 14, 15, 19, 21
A	page 3, line 6 -page 4, line 16; figure 1	7
X	EP 0 388 147 A (HITACHI LTD ;HITACHI AUTOMOTIVE ENG (JP)) 19 September 1990 (1990-09-19)	1-3, 9, 14, 19-21
A	page 10, line 41 -page 11, line 7; figure 20	4-7, 16, 18
	--- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

11 August 2003

Date of mailing of the international search report

21/08/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Di Giorgio, F

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/EP 03/03934

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 335 710 A (AISIN SEIKI) 29 September 1999 (1999-09-29) page 4, paragraph 2	1,2,9, 14,19-21
A	page 8, paragraph 2; figure 1	5-7, 16-18
X	----- EP 0 420 666 A (ISUZU MOTORS LTD) 3 April 1991 (1991-04-03) column 2, line 50 -column 3, line 37; figure 1	1,14, 19-21
X	----- EP 0 304 259 A (ISUZU MOTORS LTD) 22 February 1989 (1989-02-22) column 4, line 20 -column 5, line 40; figure 2	1,9,14, 19,21
X	----- DE 195 18 317 A (RECKERTH HUGO ;HUBER GERHARD DR ING (DE)) 21 November 1996 (1996-11-21)	1,9,14, 19,21
Y	column 10, line 20 - line 68; figure 2 -----	8,9

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/03934

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4253031	A	24-02-1981	DE 2823261 A1 FR 2426998 A1 GB 2021874 A , B SE 7904477 A	29-11-1979 21-12-1979 05-12-1979 28-11-1979
WO 0223047	A	21-03-2002	US 6449950 B1 AU 9070501 A EP 1317628 A1 WO 0223047 A1	17-09-2002 26-03-2002 11-06-2003 21-03-2002
EP 0388147	A	19-09-1990	JP 2241339 A EP 0388147 A1 US 5121605 A	26-09-1990 19-09-1990 16-06-1992
GB 2335710	A	29-09-1999	JP 11311243 A	09-11-1999
EP 0420666	A	03-04-1991	JP 1858507 C JP 3115739 A JP 5067771 B DE 69004653 D1 DE 69004653 T2 EP 0420666 A1 US 5074115 A	27-07-1994 16-05-1991 27-09-1993 23-12-1993 24-03-1994 03-04-1991 24-12-1991
EP 0304259	A	22-02-1989	JP 1045922 A JP 1813820 C JP 5025012 B DE 3867379 D1 DE 304259 T1 EP 0304259 A1 US 4884406 A	20-02-1989 18-01-1994 09-04-1993 13-02-1992 16-11-1989 22-02-1989 05-12-1989
DE 19518317	A	21-11-1996	DE 19518317 A1	21-11-1996